

#2

OIPE

## RAW SEQUENCE LISTING

DATE: 05/31/2001

PATENT APPLICATION: US/09/852,386

TIME: 17:05:47

Input Set : A:\00133.US1.ST25.txt

Output Set: C:\CRF3\05312001\I852386.raw

3 <110> APPLICANT: Roberds, Steven L.  
 4 Benjamin, Christopher  
 5 Karnovsky, Alla M.  
 6 Ruble, Cara L.  
 8 <120> TITLE OF INVENTION: Human Ion Channels  
 10 <130> FILE REFERENCE: 00133.US1  
 C--> 12 <140> CURRENT APPLICATION NUMBER: US/09/852,386  
 C--> 12 <141> CURRENT FILING DATE: 2001-05-10

ENTERED

See p.5

12 <150> PRIOR APPLICATION NUMBER: 60/203,305  
 13 <151> PRIOR FILING DATE: 2000-05-10  
 15 <150> PRIOR APPLICATION NUMBER: 60/207,092  
 16 <151> PRIOR FILING DATE: 2000-05-25  
 18 <150> PRIOR APPLICATION NUMBER: 60/206,526  
 19 <151> PRIOR FILING DATE: 2000-05-23  
 21 <150> PRIOR APPLICATION NUMBER: 60/207,033  
 22 <151> PRIOR FILING DATE: 2000-05-25  
 24 <150> PRIOR APPLICATION NUMBER: 60/207,093  
 25 <151> PRIOR FILING DATE: 2000-05-25  
 27 <150> PRIOR APPLICATION NUMBER: 60/216,893  
 28 <151> PRIOR FILING DATE: 2000-07-17  
 30 <150> PRIOR APPLICATION NUMBER: 60/237,873  
 31 <151> PRIOR FILING DATE: 2000-10-04  
 33 <150> PRIOR APPLICATION NUMBER: 60/223,245  
 34 <151> PRIOR FILING DATE: 2000-08-04  
 36 <160> NUMBER OF SEQ ID NOS: 88  
 38 <170> SOFTWARE: PatentIn version 3.0  
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 41 <211> LENGTH: 630  
 42 <212> TYPE: DNA  
 43 <213> ORGANISM: Homo sapiens  
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 50 tggacaatg ttgcgaattg tagaggcct ttgaaatgaa gttctactcc cttaaagctca 180  
 52 taaggtgggg gaatgtacaa acttttaaaa aagtctgtga gttcttttgt cagtatgcta 240  
 54 atttctctgc cactctccct ctttttcata tttctcacca gggatatgga atattgctcc 300  
 56 gagcactgaa ggaggcaaaa tcttttgtat tttatatgcc atctttggaa ttccactctt 360  
 58 tggtttctta ttggctggaa ttggagacca acttgggaacc atctttggga aaagcattgc 420  
 60 aagagtggag aaggtgtttc gagtgagtac tgtgtcatat ttaaattcta accactgcga 480  
 62 tccaattggc tttagcctga caggatccag gaggcagtat caggggcatt gtctgctttt 540  
 64 aatggaataa ttttaatgtt atgattgtat ttttctgttt tggccaatgg aagtcaaaca 600  
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 70 <211> LENGTH: 307  
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 74 <400> SEQUENCE: 2

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Input Set : A:\00133.US1.ST25.txt

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79 aaggacttct gcatgttcta ggggggggtg ggcacccgc tgacgctggt cactttccag      180
81 agcctgggca gaacggctga acgcggtggt gcggcgctc ctggtggcgg ccaagtgtg      240
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98 tcgtgccacc agcggcagct ccggagacga ggggccctgc cccaggagag cctgaaggat      180
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102 ctgacacctat gcacagcctc catcctcatc tcttgctgcg cctcagccat gtacaccccc      300
104 attgaaggct ggagctactt tgactcactc tacttctgtt ttgtggcttt cagcaccatt      360
106 ggctttgggg acctggtcag cagccagaac gccactatg agagccaagg cctctatcgc      420
108 tttgccaact tcgtcttcat cctcatgggt gtctgctgca tctactcctt gttcaatgtc      480
110 atctctatcc tcatcaaaca gtccttgaac tggatcctga ggaaaatgga cagcgggtgc      540
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125 tctgcaggct gccagcatg ccctcagtgc ccacccttg ccagccactt gcaaggccag      120
127 aaatactgca gacagttcaa tgatactttt ctgttcaga tctgagtcct caggagacct      180
129 gttcaagtgt gatcccaag tccaaagggg tctccaaatc gcttcttgac ccactaacgc      240
131 aatccctctg ccgaaatctt tccctgggtg ggacaaggtc atgcacacat agatacaacc      300
133 tccacctcga gggctctgag tgcaggaaa ggtcctagct atggcccagt cccattccca      360
135 tgtttaccct agactccccc caacctcata caatcctgga gactttcaag tggactcaga      420
137 ggccaactcc ctccctccta ggtactgcaa gtccctgggc tggtctgtt cctgacctg      480
139 gggacgctgg tcattctcat ctcccacccc atggtcttca gccatgtgga gggctggagc      540
141 ttcagcgagg gcttctactt tgctttcatc actctcagca ccattggctt tggggactat      600
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147 <211> LENGTH: 302
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149 <213> ORGANISM: Homo sapiens
151 <400> SEQUENCE: 5
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156 aggggggatac caaagagagc atagagcatg cacaagtact tgccaagcct ggtgacgggg      180
158 tagatgtagc catagcctga aaaagaagat ggagcttaga gtttgcactt ggccccctcc      240
160 ctttttcccc ccaaaagctt taaagagacc ttctgccatc tcccctcctt ggcatgacat      300
162 tt                                           302

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Input Set : A:\00133.US1.ST25.txt

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173 ggtgacgaag cagaaagtag agcgagtcca cgtagtccca gccctccacg ctggtgtaca      120
175 tggccgaggg gcagcaggac agcagcacgg cgaacaggcc caggatgagc agcacgtggg      180
177 acaccgaggg cttccagccc gccaggctgt cggcctccga gagcgcgagg ccgcgggcga      240
179 aggtggcggg cagcaggccg ctgcggcgca gctggcgctc ccggcaggcg cgcagtatga      300
181 aggccagcag cgagatgatg cgctccagga agaggttgaa gaacaggatg gtcccagcgc      360
183 agccgaacag cccgtagggc atgaggaagg ccttcccgcc caccgtcgcg ggggtggtca      420
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187 actgggcgag ggtggggggg gtggggggcg gggcatgcag gtgcttgcg ggctcctatc      540
189 tcgagtggca ccactcaggt ggaggaagaa cagcacttag tcatttatct cccttgggtg      600
191 cacttaatat gtttcctgat cttggcagcc cctaaactga tggaggagac atggcccttc      660
193 atcttgggga cctataaacc caagtggttg ggacaggtag tcactaggaa ggacccatca      720
195 tgacac                                           726

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208 gatcgcaaga gtcctctctg gcattgcggg cagcaccgcg tgtccatttt cctcaggatc      180
210 cagttcaagg actgtttgat gaggatagag atgacattga acaaggagta gatgcagcag      240
212 acacccatga ggatgaagac gaagttggca aagcgataga ggccttggct ctcatagtgg      300
214 gcgttctggc tgctgaccag gtcccaaag ccaatgggtg tgaaagccac aaaacagaag      360
216 tagagtgagt caaagtagct ccagccttca atgggggtgt acatggctga ggcgcagcaa      420
218 gagatgagga tggaggctgt gcataggatc agcatgacgt agtacacgga gggcttccag      480
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225 <212> TYPE: DNA
226 <213> ORGANISM: Homo sapiens
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233 gtactcctg gaaacacctt ctccactctt gcaatgcttt tcccaaagat ggttccaagt      180
235 tgggtctcaa ttccagccaa taagaaacca aagagtggaa ttccaaagat ggcatataaa      240
237 atacaaaaga ttttgcttcc ttcagtgtct ggagcaatat tcccatacc ttggtgagaaa      300
239 tatgaaaaag agggagagtg gcagagaaat tagcatactg accaaagaac tcacagactt      360
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248 <212> TYPE: DNA
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251 &lt;400&gt; SEQUENCE: 9

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256 ctcccatact cccactccc gcccccagga gcctgtggga gaggcttatg gtctttgggg      180
258 gcgcgctcat gtgccaggga catggggaag ggtagccgga gccagcaca agggcaggca      240
260 gggcatggag cagctcacca agaagatggc ttcaatgtga ccgatgccat ggcgaggga      300
262 ggagcccagc cggccccga cccctgccag taggatccca aacagcggaa tccccaccag      360
264 cgcataaaag atgcagaaga ggcgcccgcc atctgtgcgc agggccacat tgccatagcc      420
266 tgggcagagg ggcgatgcag gaagtctagg ggccacctgg gacctctcg tctcccttgc      480
268 accttcccc atgaggaagc tccttgccgc cccccacatg ccaatccct cccccaccga      540
270 tgggtggtgat gatgtccct gagaaaaaga aggcgctgcc caggtccaa gctgagtggc      600
272 tgctgttgct ggtcgagttg gtttctgg                                     628

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275 &lt;210&gt; SEQ ID NO: 10

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277 &lt;212&gt; TYPE: DNA

278 &lt;213&gt; ORGANISM: Homo sapiens

280 &lt;400&gt; SEQUENCE: 10

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285 gtgtggctag gaaactggac cattacctag aatatggagc agcagtcctc gtgctcctgg      180
287 tgtgtgtgtt tggactgggt gccactggc tggcctgcat atggtatagc atcggagact      240
289 acgaggtcat tgatgaagtc actaacacca tccaaataga cagttggctc taccagctgg      300
291 ctttgagcat tgggactcca tatcgctaca ataccagtgc tgggatattg gaaggaggac      360
293 ccagcaagga ttcattgtac gtgtcctctc tctactttac catgacaagc cttacaacca      420
295 taggatttgg aaacatagct cctaccacag atgtggagaa gatgttttcg gtggctatga      480
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307 &lt;400&gt; SEQUENCE: 11

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312 accagtgtca gcgggatgcc cagcacggcg tagaacatgc agaaggcctt gcccgcatcg      180
314 gtgccagggt cagcgtgccc ataacctgtg ggaaggggat gagaagaaca gagagagcaa      240
316 gtgaggaggg gtctagagggt tgggggaagg gagggctgac ttggtgcagt gcagtgcaat      300
318 gcagaggggc ctggtactgg gggaatttcc tctgcagggt agaggggcgt ggccatatat      360
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326 caatgccatc ttaaagccac ataaaggctt taaaaagaaa aaagcagatt cactactaag      600
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335 &lt;212&gt; TYPE: DNA

336 &lt;213&gt; ORGANISM: Homo sapiens

338 &lt;400&gt; SEQUENCE: 12

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355 ttacacattg tttttgaaaa tactcatctc aaagcattca gccactggtc tggcattagg      540
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372 gactccaagg ccgtccagcc ctcgatgtac ttaaagatga cagcagggat cgtcacaaac      180
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384 caggtcaaac aaacaaaaaa atcctgctta gccaatgctt tgaatgtttc ttgcatgggt      540
386 ccatgactgc agcccaaagt ctgattctga cttctcactg gtgcaaatat aatggtttcc      600
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401 cacacgcccc ccttcccttg caggatatgg gaacctggca cccagcacag aggcagggtca      180
403 ggtcttctgt gtcttctatg ccctgttggg catcccgtt aacgtgatct tctcaacca      240
405 cctgggcaca gggctgcgtg cccatctggc cgccattgaa agatgggagg accgtcccag      300
407 gcgtcccgag gtatgcccc taactccctt acaggcctgc tgtgacagat ctgttgcaag      360
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415 gtcccacagt g                        551
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421 <213> ORGANISM: Homo sapiens
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**Please Note:**

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

**VERIFICATION SUMMARY**

PATENT APPLICATION: US/09/852,386

DATE: 05/31/2001

TIME: 17:05:48

Input Set : A:\00133.US1.ST25.txt

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L:12 M:270 C: Current Application Number differs, Replaced Current Application No

L:12 M:271 C: Current Filing Date differs, Replaced Current Filing Date

L:1356 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:45

L:1359 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:45

L:1456 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:49

L:1459 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:49